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EXAMINER	
TSOY, ELENA	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/531,353

Applicant(s)

MA ET AL.

Examiner

Elena Tsoy

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 31 May 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-24 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

Response to Amendment

Amendment filed on May 31, 2007 has been entered. New claims 22-24 have been added. Claims 1-24 are pending in the application.

Claim Objections

1. Claims 9-11 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Claim 1 recites that a monomer mixture *consists essentially of* carboxylic acid group containing monomer. Claim 9 recites that the monomer mixture of claim 1 comprises one or more functional (meth)acrylate monomers and one or more non-functional (meth)acrylate monomers, thus failing to further limit the subject matter of a previous claim.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 1-24 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Claims 1 and 22 recite a monomer mixture consisting essentially of 2 weight percent

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to 12 weight percent of carboxylic acid group containing monomer based on total weight of the acid functional acrylic copolymer which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The specification as originally filed disclose a monomer mixture **comprising** 2 weight percent to 12 weight percent of carboxylic acid group containing monomer based on total weight of the acid functional acrylic copolymer.

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Rejection of claims 4, 15, 16, and 21 under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention has been withdrawn due to amendment.

6. Claims 1-24 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

It is held that the transitional phrase “consisting essentially of” limits the scope of a claim to the specified materials or steps “and those that do not materially affect the basic and novel characteristic(s)” of the claimed invention. The specification discloses that an acid functional acrylic copolymer is polymerized from a monomer mixture that **includes** carboxylic acid group containing monomer that provides *strike-in* properties (See page 4, lines 17-27), one or more functional (meth)acrylate monomers that provide *extended pot life and durability* of the coating (See page 5, lines 17-26), one or more non-functional (meth)acrylate monomers (See page 6,

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lines 6-17), and acrylonitrile or methacrylonitrile (See page 6, lines 21) that provide *hardness and mar-resistance* (See page 6, lines 18-24).

Claims 1 and claim 22 recite a monomer mixture *consisting essentially of* **different** components thereby rendering the claims indefinite because it is not clear what essential components are.

Thus, the specification as originally filed and claims do not provide a clear indication which components of a monomer mixture materially affect the basic and novel characteristic(s) of the claimed invention. *For the purposes of searching for and applying prior art under 35 U.S.C. 102 and 103, absent a clear indication in the specification or claims of what the basic and novel characteristics actually are, "consisting essentially of" will be construed as equivalent to "comprising."*

Specification

7. Objection to the disclosure because of the informalities has been withdrawn due to amendment.

Double Patenting

8. A rejection based on double patenting of the "same invention" type finds its support in the language of 35 U.S.C. 101 which states that "whoever invents or discovers any new and useful process ... may obtain a patent therefor ..." (Emphasis added). Thus, the term "same invention," in this context, means an invention drawn to identical subject matter. See *Miller v. Eagle Mfg. Co.*, 151 U.S. 186 (1894); *In re Ockert*, 245 F.2d 467, 114 USPQ 330 (CCPA 1957); and *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970).

A statutory type (35 U.S.C. 101) double patenting rejection can be overcome by canceling or amending the conflicting claims so they are no longer coextensive in scope. The filing of a terminal disclaimer cannot overcome a double patenting rejection based upon 35 U.S.C. 101.

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9. Provisional rejection of claims 1-21 under 35 U.S.C. 101 as claiming the same invention as that of claims 1-21 of copending Application No. 10/696,093 has been withdrawn due to abandonment of the Application '093.

Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. Claims 22-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Swarup et al (US 5506325) for the reasons of record set forth in paragraph 7 of the Office Action mailed on 12/01/2006 because the scope of claims is of the same as that of claims 9-11.

As to claim 23, it is noted that a number average molecular weight of about 500-30,000 in Swarup et al overlaps claimed range of 15,000-100,000. Overlapping ranges are *prima facie* evidence of obviousness. It would have been obvious to one having ordinary skill in the art to have selected the portion of Swarup et al's range that corresponds to the claimed range. *In re Malagari*, 184 USPQ 549 (CCPA 1974). Or it would have been obvious to one of ordinary skill in the art at the time the invention was made to have determined the optimum values of the relevant molecular weight parameters (including those of claimed invention) in the cited prior art through routine experimentation depending on particular use of a final product in the absence of showing of criticality.

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12. Claims 1-22, and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Swarup et al (US 5506325) in view of Nakate et al (US 4291137).

Swarup et al are applied here for the same reasons as set forth in paragraph 7 of the Office Action mailed on 12/01/2006. As was discussed there, Swarup et al teach that the acid functional acrylic copolymer has a GPC weight average molecular weight ranging from 7,000 to 18,000 (See column 5, lines 16-21). Swarup et al fail to teach that a GPC weight average molecular weight of the acid functional acrylic copolymer is within the range of 20,000-100,000.

However, it is well known in the art that coating properties depend on molecular weight of a polymer of a coating composition, as evidenced by Nakate et al showing that the molecular weight of an acrylic resin influences the durability, hardness and water resistance of the resulting cured coating (See column 5, lines 7-9), e.g. if the molecular weight is lower than about 5,000, the resulting cured coating is inferior in physical strength, durability, and set to touch, and if it is higher than about 50,000, the resulting composition is inferior in adhesiveness to a previously applied coated film, in workability in a coating procedure (See column 5, lines 10-21). In other words, the molecular weight of polymer is a result-effective variable. It is held that it is not inventive to discover the optimum or workable ranges of result-effective variables by routine experimentation. In re Antonie, 559 F.2d 618, 195 USPQ 6 (CCPA 1977). See also In re Boesch, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have determined the optimum values of the relevant molecular weight parameters (including those of claimed invention) in the cited prior art through routine

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experimentation depending on particular use of a final product in the absence of showing of criticality.

As to claim 8, it is the Examiner's position that the copolymer of the cited prior art has Tg within claimed range since it is substantially identical to that of claimed invention.

13. Claims 1-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Barsotti (US 4411951) in view of Swarup et al for the reasons of record set forth in paragraph 8 of the Office Action mailed on 12/01/2006.

Barsotti teaches that acrylic polymers are prepared from a mixture containing 0.1-5% of carboxylic acid group containing monomer (See column 5, lines 59-63) which **overlaps** claimed range of 2-12 %. The acid functional copolymer of Barsotti has a number average molecular weight of about 500-30,000 in (See column 3, lines 11-15) which overlaps claimed range of 20,000-100,000.

It is held that overlapping ranges are *prima facie* evidence of obviousness. It would have been obvious to one having ordinary skill in the art to have selected the portion of Barsotti's range that corresponds to the claimed range. *In re Malagari*, 184 USPQ 549 (CCPA 1974). Or it would have been obvious to one of ordinary skill in the art at the time the invention was made to have determined the optimum values of the relevant molecular weight or concentration parameters (including those of claimed invention) in the cited prior art through routine experimentation depending on particular use of a final product in the absence of showing of criticality.

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14. Claims 5-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Swarup et al in view of Nakate et al/ Barsotti in view of Swarup et al/, further in view of Hazan et al (US 5,244,696) for the reasons of record set forth in paragraph 9 of the Office Action mailed on 12/01/2006.

Response to Arguments

15. Applicants' arguments filed May 31, 2007 have been fully considered but they are not persuasive.

(A) Applicants argue that there was no teaching in Swarup et al that a copolymer of molecular weight 13,000 - 18,000 can provide resultant coating with strike-in resistant property. The fact that Swarup et al chose to require additional element, such as "2 to 14 percent by weight of an ethylenically unsaturated oligomeric monomer" indicates that the copolymer of instant invention was not known to those skilled in the art and the use of such copolymer for strike-in resistant coating was not known and was not obvious to those skilled in the art at the time of invention. The acid functional acrylic copolymer of the instant invention has weight average molecular weight more than 15,000. The instant invention does not require such oligomer described by Swarup et al. The acid functional acrylic copolymer of the instant invention is polymerized from a monomer mixture of carboxylic acid group containing monomer, functional (meth)acrylate monomer, alkyl (meth)acrylate, and styrene (Page 4, line 35 to Page 6, line 24). The amended claim 1 and a new claim 22 now have a transitional phrase "consisting essentially of" to specifically point out such limitation that the oligomer required by Swarup et al is not required in the instant invention.

The Examiner respectfully disagrees with this argument. First of all, the acid functional acrylic copolymer of Swarup et al has weight average molecular weight of up to 18,000, i.e. includes a monomer having weight average molecular weight of more than 15,000.

Secondly, in contrast to Applicants statement that the acid functional acrylic copolymer of the instant invention is polymerized from a monomer mixture of carboxylic acid group containing monomer, functional (meth)acrylate monomer, alkyl (meth)acrylate, and *styrene* (Page 4, line 35 to Page 6, line 24), the specification as originally filed discloses that the monomer mixture may include *acrylonitrile or methacrylonitrile* (See page 6, line 21).

Thirdly, claim 1 recites a **mixture** of **monomers** (note that there is no negative limitation that the monomers are not *non-oligomeric monomers*) *consisting essentially of* carboxylic acid group containing monomer thereby *not excluding* oligomeric carboxylic acid group containing monomers and *non-essential* monomers including an ethylenically unsaturated oligomeric monomer especially considering the fact that the ethylenically unsaturated oligomeric monomer is also a carboxylic acid group containing (oligomeric) monomer (See column 2, lines 14-15).

As to claim 8, therefore, in contrast to Applicants argument, the copolymer of the cited prior art is substantially identical to that of claimed invention, and, thus, has Tg within claimed range.

(B) Applicants argue that in Barsotti a polymer comprises 0.2% to 1% by weight carboxylic acid group containing monomer (Barsotti, Col. 5, line 68 - Col. 6, line 3). The instant invention claims a copolymer comprising 2% to 12% by weight carboxylic acid group containing monomer. The composition of the instant invention is therefore distinctively different from Barsotti. Barsotti disclosed in generally term that acrylic acid could be at a range from 0.1 -5%

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(Barsotti, Col. 5, line 63). However, Barsotti chose to use 0.2% - 1% by weight acid monomer and added additional component, such as polyethylene glycol, to achieve desired coating property. This fact indicates that the copolymer of the instant invention was not known to those skilled in the art at the time of invention.

The Examiner respectfully disagrees with this argument. It is held that patents are relevant as prior art for all they contain. See MPEP 2123. **Disclosed examples and preferred embodiments do not constitute a teaching away from a broader disclosure or nonpreferred embodiments.** See MPEP 2123. Therefore, 0.2% - 1% of Barsotti does not teach away from general teaching of 0.1 -5%.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Elena Tsoy whose telephone number is 571-272-1429. The examiner can normally be reached on Monday-Thursday, 9:00AM - 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy Meeks can be reached on 571-272-1423. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Elena Tsoy
Primary Examiner
Art Unit 1762

ELENA TSOY
PRIMARY EXAMINER
ETsoy

June 27, 2007